L Number	Hits	Search Text	DB	Time stamp
1	0	("(light or illuminaiton) same (print or printer) same (crt or display or lcd or plasma or cathode adj ray adj tube)").PN.	USPAT	2002/10/25 10:57
2	0	("(light or illumination) same (print or printer) same (crt or display or lcd or plasma or cathode adj ray adj tube)").PN.	USPAT	2002/10/25 10:57
3	0	("(print or printer) same (crt or display or lcd or plasma or cathode adj ray adj tube)").PN.	USPAT	2002/10/25 10:58
4	36761	(print or printer) same (crt or display or lcd or plasma or cathode adj ray adj tube)	USPAT	2002/10/25 10:59
5	4385	(light or illumination) same (print or printer) same (crt or display or lcd or plasma or cathode adj ray adj tube)	USPAT	2002/10/25 10:59
6	1786	(light or illumination) same print same (crt or display or lcd or plasma or cathode adj ray adj tube)	USPAT	2002/10/25 11:24
7	31052	345/$.ccls.	USPAT	2002/10/25 11:01
8	41566	348/$.ccls.	USPAT	2002/10/25 11:01
9	20014	358/$.ccls.	USPAT	2002/10/25 11:01
10	87076	345/$.ccls. or 348/$.ccls. or 358/$.ccls.	USPAT	2002/10/25 11:01
11	476	((light or illumination) same print same (crt or display or lcd or plasma or cathode adj ray adj tube)) and (345/$.ccls. or 348/$.ccls. or 358/$.ccls.)	USPAT	2002/10/25 11:02
12	1091264	(((light or illumination) same print same (crt or display or lcd or plasma or cathode adj ray adj tube)) and (345/$.ccls. or 348/$.ccls. or 358/$.ccls.)) and color ajd temperature	USPAT	2002/10/25 11:02
13	23	(((light or illumination) same print same (crt or display or lcd or plasma or cathode adj ray adj tube)) and (345/$.ccls. or 348/$.ccls. or 358/$.ccls.)) and color adj temperature	USPAT	2002/10/25 11:24
14	2	(("5446476") or ("5081529")).PN.	USPAT	2002/10/25 11:18
15	1091	(light or illumination) same print same (crt or display or lcd or plasma or cathode adj ray adj tube)	EPO; JPO; DERWENT; IBM_TDB	2002/10/25 11:24
16	0	((light or illumination) same print same (crt or display or lcd or plasma or cathode adj ray adj tube)) and color adj temperature	EPO; JPO; DERWENT; IBM_TDB	2002/10/25 11:25

9/111,731

US-PAT-NO: 5446476

DOCUMENT-IDENTIFIER: US 5446476 A

TITLE: Color image forming apparatus

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col. 4 line 56 to col. 5 line 9

When the function key 71 is turned on, the liquid crystal display 66 displays a picture of FIG. 4. In this state, the lighting condition in which the color image is to be observed can be set. On the picture, six items "standard", "incandescent lamp", "sunlight", "fluorescent lamp (red)", "fluorescent lamp (white)" and "fluorescent lamp (blue)" are indicated, and by use of the dials 67 and 68, the operator can select one of these. FIG. 4 shows a state that "fluorescent lamp (white)" is selected. In the initial state, "standard" is selected, and the image processing unit 7 makes print data to make a color image which will makes a favorable impression under white light. The light source which illuminates a color image influences the color temperature and the spectral distribution, and the same color image makes different impressions on an observer in different lighting conditions. FIG. 5 shows the spectral intensity characteristic of the sunlight (curve A) and that of a fluorescent lamp (white) (curve B). Likewise, the other kinds of lights each have a peculiar spectral intensity characteristic, and the image processing unit 7 adjusts image data to the selected lighting condition.

US-PAT-NO: 5081529

DOCUMENT-IDENTIFIER: US 5081529 A

TITLE: Color and tone scale calibration system for a printer using
electronically-generated input images

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col 1 lines 20-43

While it is possible to obtain a reasonable match between the print 10 and the
monitor image 16 at this point, it is very difficult to obtain a highly
satisfactory match for a variety of reasons. One reason is that different
processes are used to produce color in the two systems. A CRT monitor uses an
additive color process, in which mixtures of red, green, and blue light from
color phosphors are added together to produce a variety of colors. On the
other hand, a color print utilizes a subtractive color process, whereby ambient
light passes through layers of color dyes and reflects from the white paper
base of the print back through the color dye layers. Color is produced by
subtracting portions of the color spectrum from the light striking the surface
of the print. Furthermore, a CRT display and a color print each have a
different color gamut, which is the range of colors (hue, saturation, and
brightness) that can be produced by a specific set of primary colors.
Generally, CRT phosphors possess a wider color gamut than do photographic
printing dyes, particularly in the blue and green regions. However, there are
some colors that can be printed that cannot be displayed on a typical CRT
display.

col 6 lines 3-32

Turning next to color reproduction, it is first noted that

a significant portion of "color matching" is accomplished by having matching tone reproduction. If the tone reproduction is correct and the color is within the color gamut of both printer 14 and monitor 18, then the color match between the print 10 and the display 16 should be acceptable. Apart from tone reproduction, there are several other variables that can affect the perceived degree of color matching. The first factor is the monitor color temperature or white point. Broadcast television monitors are usually adjusted to approximately 6500 degrees K, which is very close to being perceived as neutral or white by most observers. Computer graphic monitors are usually adjusted to approximately 9300 degrees K, which has a slightly bluish appearance when compared to a white sheet of paper. The second factor is the color temperature of the ambient lighting. Because of the subtracting nature of the printing process, the perceived color of an object on a print is strongly influenced by the spectral energy distribution of the light source under which the print is being viewed. The third factor is the spectral characteristic of the dyes used in the printing process, and is closely related to the ambient lighting as mentioned above. Different dyes can have different spectral absorption characteristics for different wavelengths. It is possible, for example, to have two cyan dyes which look identical under tungsten lighting (approximately 3200 degrees K), but look quite different under fluorescent lighting (approximately 5000 degrees).

col. 6 lines 33-63

The printer 14 has a built-in default color matrix having terms selected to compensate for one or more of a number of problems, including the cross-talk characteristics of the thermal printing dyes (that is, the

overlapping spectral
sensitivities of the dyes), dye transfer problems, phosphor characteristics and
color temperature of the monitor, illuminant
characteristics, and the like.
(If such corrections are not made, the default matrix is a unity matrix.)
Initially, these terms are accessed by the color matrix 48. If the foregoing
compensation is still unacceptable, the saturation and hue adjustments of the
color controls 34 in the calibration utility 22 can be used to further modify
the print color. When the saturation and hue are accordingly adjusted and
modification color matrix terms are generated by the printer color algorithm
30, the new terms are stored in a modification matrix memory 60 in the
calibration utility 22. Meanwhile, the default terms are read from the color
matrix 48 and written into a default matrix memory 62, also in the calibration
utility 22. The modified terms and the default terms are multiplied in a
matrix multiplication operation 64 and the resultant new matrix values are
written into the color matrix 48 in the printer 14. The new terms in the color
matrix 48 then become the old (default) terms for the matrix multiplication 64
as further color corrections are made. The printer color matrix 48 thus begins
with the default matrix terms and, as corrections are made, is changed to
contain the results of the matrix multiplication 64. The finally generated
color matrix 48 accordingly modifies the image signal applied to the image
calibration table 49.